Upcoming Deadlines/Meetings
- GMAC 22-23 May
  - Sha Feng, Ken Davis, Jinwoong Kim (ECCC)
  - Lei, Ivar presentations
- TRANSCOM/IG3IS 17-20 September, Lund, Sweden
  - Abstracts Due 14 May
  - Arlyn plans to attend…anyone else?
- CMS 2014 final report: June?
- CMS meeting: November?
- CMS 2017 annual report: June?

Funding Opportunities
- **ABoVE Phase 2:** NOI June 18, 2018, Proposals due September 7, 2018

Upcoming LPDM Presentations/Discussions
- Volunteers? – Colm ABOVE CASA GEOS5 versus data example.
- Topics-
  - CASA fields from Chris W & Yu Zhou

AER-WRF Runs (ACT-1)

- Simulation dates:
  - ACT-1: 1 July - 28 August 2016 (~8 weeks)
  - ACT-2: 15 January - 10 March 2017 (~8 weeks)
- Implementation of new MYNN-EDMF PBL scheme
  - Possible inconsistencies between MYNN-EDMF and WRF-CHEM tracer mixing?
    - Wayne recommends short test case (a few days with deep boundary layers in SE US &/or shallow convection
    - Built-in tracer mixing in MYNN-EDMF needs to be enabled in the boundary layer scheme within the code and recompiled & then turn off the WRF-CHEM
- Domain configuration
  - # vertical levels
  - 3km nest over & upwind of complex terrain
- Met data for evaluation
  - ACT-1 PBL height: Sandip Pal has some ACT ABL measurements ready to go, more are pending
  - SGP profilers & sondes
  - CSD Doppler lidars
- Tracers for WRF-CHEM
  - 1 or 2 fossil CO_2: Vulcan, ODIAC
  - 1 bio CO_2 with separate GPP & R: Chris Williams & Yu Zhou
  - Fire co_2?
  - CH_4 - Jacob group gridded inventory, wetlands?, cows?

GOAL: ACT-1 simulations in time for July Science Team Meeting

Action items: Report on WRF configuration (Thomas N)
Tracer flux prep (Mike)
Met data for evaluation (Arlyn/Bianca?)

STILT-WRF Satellite Simulations for CMS2014

- Footprints
  - GOSAT: 2009-2015
    - Status of 2013/2014 footprints (Josh)
    - Missing footprints for other periods (ie. Not included in ACOS version used to build receptor list)
    - Want to compare with Kulawik 2-level product
  - OCO-2: Sept 2014-
- In situ informed CO_2 Fluxes for forward simulations
  - Lei 2007-2015
  - Yoichi 2007-2012
- Background
  - AirCore informed stratosphere
  - Improvements to Empirical Background (separate slide)

GOAL: Plots for CMS2014 final report

Action items: Provide Flux product from CT-L
Get latest fluxes from Yoichi
AirCore informed stratosphere (Arlyn will deliver algorithm & sample case to Mike)
Mike will get Lei up to speed on using his column code.
Find out status of Josh GOSAT footprints (Arlyn)
Get latest GOSAT ACOS data

STILT Receptors

- Footprints for aircraft intensive campaigns
  - SENEX-2013, SONGNEX-2015 done (10-sec time resolution?)
  - What other campaigns/datasets should we prioritize?
    - Focus on post-2007: ACG, ATOM, HIPPO/START08
- Comprehensive receptor lists needed for ACT-1
  - In situ aircraft, flask, tower/surface, TCCON, OCO2, GOSAT
- Better way to manage site metadata for receptor list generation (coordinates, intake heights, species measured)?

> GOAL: ACT1 STILT receptors in time for ACT science team meeting in July

Action items: Arlyn will send sample aircraft receptor list to Bianca

HYSPLIT Footprint Library

- Scripts to run footprints on theia are ready (or nearly ready)
- North American Met data:
  - https://ready.arl.noaa.gov/archives.php
  - NAMS: 2010-03-29 and onward (are their missing files?)
  - NAM12: May 2007-present
  - HRRR: June 2015 – present
- Cases:
  - NoAm all flasks: 2007 - present
    - Maybe start with 2010 due to lots of 14CO2
  - ACT-1 & ACT-2
    - PSUWRF-HYSPLIT (ACT-2)
      - Flasks only so far
    - NAMS-HYSPLIT
      - Flasks only so far

GOAL: Create parallel libraries of footprints for limited number of cases with specific analysis in mind. Enable multiple transport inversions for flask species.

Action items: Network receptor list for ACT-1 (i.e., towers, aircraft, TCCON, OCO-2, GOSAT) – Arlyn
            Continuous aircraft receptor list for ACT (Bianca)
            Kirk, Arlyn, Bianca? access to Theia

Radiocarbon transport evaluation

- Scripts to convolve high-res nearfield footprint with FF inventories and add contribution from farfield
- Compute CO2ff
    - Background fields from Sourish
    - "disequilibrium" issue at LEF
- Gridded Vulcan & ODIAC
    - regular 0.1 deg nearfield degraded to 1 deg for farfield
    - Temporal downscaling

Action items:

GOAL: Continental-scale transport model evaluation with relatively well known true fluxes. Convolve footprints with Vulcan & ODIAC FF inventories & compare with CO2ff derived from radiocarbon.

Hollings Scholar – Isaac Arseneau
- Nominal dates on site: May 29 – July 27
- Work through Lewis' tutorial
- Prepare basic pseudo-data framework
  - Scaling factors or additive corrections?
- Earth Networks data viewer update to latest version of EN files
  - Look at real data records to figure out which are most promising (e.g. gaps, uncertainties, flags)

Action items:

GOAL: Evaluate potential for Earth Networks & other new datasets to improve our inversions.

New CT-L Inversions

- North America
    - 13CO2 – Ivar
        - Questions about pseudo data experiments & uncertainty specification
    - CH4 – Josh
        - ECCC observations
        - AirCore informed Stratosphere + EBG versus statistical BG
    - Propane – Lei
    - COS/SIF – Yoichi
    - Chloroform - Geoff

    GOAL:

    - Geostatistical – Yuanyuan, Nina?
    - Cindy – (1) Work with Stephen Ogle on N2O for National GHG invernory; (2) Looking for CO2:N2O flux correlations
    - Caroline CMS
    - CTDAS EnKF - Huilin, We He
- South America
    - Who will do this?

Action items:

Other Inversion R&D

- Comprehensive evaluation of diurnal cycles in Lei's & Yoichi's products
  - Compare to sites?
  - OSSE Prior versus truth average diurnal cycle on ecoregional scales
- Inversions Diagnostics
  - Degrees of Freedom of Signal & of the State (i.e. the fluxes)
  - Metrics of information content – Averaging Kernels, Resolution Kernels
- Visualization tools for Error Covariance Matrices
- EBG improvement – Kriging in continental boundary layer for all gases

Action items:

GOAL:

Research to Applications

- Implement Lei's inversion locally?
    - Test version for training
    - Code posted to CT-L website for download and add documentation
    - GitHub, SVN, or similar code-management platform?
- Product packages for published inversions (Lei CO2, HFC-134a, etc.; Cindy's N2O?)
    - Fluxes, Backgrounds, H strips, comprehensive tables of error covariance parameters
- Tool to search footprint libraries and create custom tar for ftp
- Should we host workshops to train people how to use CT-L for their own applications?
    - Publish Lewis' tutorial on website
    - Add scaling factor inversion to tutorial
    - Add MLE to tutorial

Action items:

GOAL: Provide access to CT-L flux products & eventually implement routine updates for some analysis

CT-L Calendar

– plan is to make a dedicated CT-L google calendar with "out of office", relevant meetings, possibly project milestones